

PROBLEMS AND SOLUTIONS FOR ABANDONMENT OF UTILISED AGRICULTURAL AREAS IN LATVIA

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Abstract. Utilised agricultural area is one of the most important natural resources in Latvia, which provides population with food and promotes the operation of agricultural companies. Unfortunately, appropriate land management is a problem for the majority of agricultural land owners, thereby adversely affecting the efficiency of resource use and increasing possibilities for the resource depletion. Constantly new solutions are searched for in Latvia to avert inefficient use of utilised agricultural areas and reduction of land as resource. Therefore, the research aim is to identify problems for agricultural land abandonment and describe adopted solutions for reduction of the abandoned land areas in Latvia. The authors have concluded that the utilised agricultural areas decrease with every year in Latvia; thus, constituting the decline of 2.78 % within six years. Land areas primarily decrease due to the abandonment and change of land use purpose. The share of unmanaged utilised agricultural areas in the total amount of agricultural land ranges from 12.97 % to 15.23 % between 2011 and 2016 reaching the peak in 2015. The major reasons for land abandonment include inefficient land management due to its low quality (soil fertility) as well as land owners lack the financial resources, time and willingness to manage the land. To avoid land degradation and decline of land resources, an additional immovable property tax rate in the amount of 1.5 % to agricultural land which is not being farmed is imposed from 2010 and from 2016 fines are applied to those landowners who leave land abandoned. The research is mainly based on the monographic descriptive method as well as the methods of data analysis and synthesis and a graphical method.

Key words: utilised agricultural area, land abandonment, soil fertility.

JEL code: Q15

Introduction

The European Commission identifies utilised agricultural area as the total area taken up by arable land, permanent pasture and meadow, land used for permanent crops and kitchen gardens (Commission Regulation, 1987). Generally, the utilised agricultural area (hereinafter UAA) is the land on which agriculture is the main economic activity and it includes arable land, meadows, pastures and orchards. Though, definitions for abandoned land and their interpretations differ, for example, W.L. Filho (Filho et al., 2016) and other authors define land abandonment as "a term commonly used to describe uncultivated land (land used for agricultural purposes until recent times but not currently cultivated, with a noticeable cover of shrubs), as abandoned land (land not subject to any cultivation practice (including conservation agriculture), nor intended for grazing), neglected land (when they pose a threat to neighbour owners)". C.Keenleyside and G.Tucker (Keenleyside, Tucker et al., 2010) have pointed that farmland abandonment can be a complex

and gradual process, starting with progressive marginalisation (i.e. withdrawal of management) that leads initially to a reduction in farming intensity (e.g. lower stocking rates or concentration of management in a reduced area of the farm or infrequent cultivations). In this point, the authors of the present research agree with the previous authors that "it can be difficult to define and recognise abandonment of various degrees, especially since it can also be temporary, transitional or permanent" (Keenleyside, Tucker et al., 2010). Therefore, the present research employs the term *abandoned land* as a synonym for unfarmed, uncultivated or unmanaged agricultural land.

The research authors similar to other researchers like I.Pilvere, A.Nipers, I.Upite (2014) consider that the UAA is a limited and key natural resource ensuring agricultural production. V.Sinkeviciute (2014) as well as I.Pilvere, A.Nipers, I.Upite (2014) in their studies on utilised agricultural areas point to the fact that appropriate use of agricultural land ensures a long-term provision of food to population. An

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efficient use of land and proper maintenance of its condition may ensure and develop agricultural production as well as enhance the economic growth in general. Several authors have concluded that the inappropriate use of land leads to its degradation consequently reducing the efficiency of this natural resource and reduced agricultural output. The shrinkage of production has been accompanied by both a trend towards less intensive farming systems and the removal of some land from production, either temporarily or permanently (Land Abandonment, 2004).

Many researchers (Mandel M., Maasikamäe S., 2015; Baumann M., Kuemmerle T. et al., 2011; Gellrich M., Zimmerman N., 2007; Keenleyside C., Tucker G.M., 2010; Mandel M., Maasikamäe S., 2013; Pilvere I., Nipers A., Zarins J., 2013; Platonova D., 2014; Atkocevicene V., Gudritiene D., Sudoniene V., 2011; Platonova D., Jankava A., 2011) have studied the use of land from different aspects like conversion of land, land abandonment problems, preconditions of land consolidation etc., as they have always been topical. These researchers have focused basically on the efficiency of agricultural land use and possibilities to increase land productivity. However, the present research is aimed at the analysis of reasons for the abandonment of agricultural land and study of the methods applied in Latvia for the reduction of the unmanaged agricultural land areas in order to avoid land degradation and decline of this natural resource. Therefore, the authors of the present research have advanced the research **hypothesis**: land abandonment arises from low soil fertility due to the terrain peculiarities, lack of financial resources, time or unwillingness to manage land. The research **aim** is: to identify problems for agricultural land abandonment and describe adopted solutions for reduction of the abandoned land areas in Latvia. The following **tasks** are set to successfully achieve the research aim: 1) to study changes in the utilised

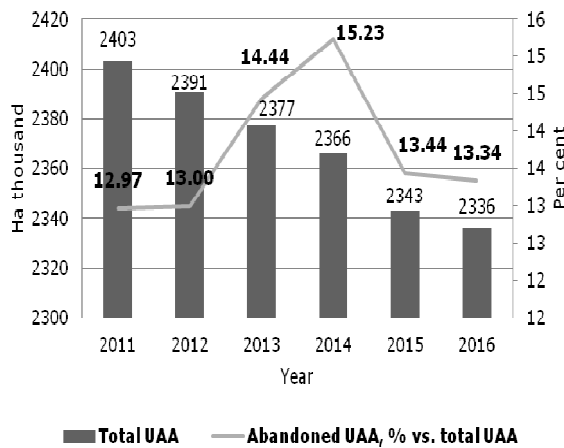
agricultural areas; 2) to analyse reasons for the abandonment of utilised agricultural areas; 3) to describe the presently adopted solutions for reduction of abandoned agricultural areas.

The research is mainly based on the monographic descriptive method as well as the methods of analysis and synthesis are used to study the problem elements and synthesise coherencies or formulate regularities; graphical and data analysis methods facilitate data reflection and interpretation. The authors have used legal and regulatory enactments, statistical data, and working papers and research done by local and foreign scientists for the needs of the present study.

Research results and discussion

In Latvia, the utilised agricultural area covered 36 % on average of the total land area from 2011 to 2016. Nevertheless, it has to be admitted that the agricultural land areas have decreased from 2 402 619 ha to 2 335 773 ha during the analysed period (Rural Support Service data, 2011-2016) or by 66 846 ha (2.78 %) within the period of six years. The most rapid decline was observed in 2015 when the utilised agricultural areas decreased by 23 505 ha compared with the previous year. Agricultural land areas are decreasing due to inappropriate land management; thus, resulting in a change of land use purpose, for example, following all the requirements prescribed by the Cabinet Regulation No 496 (20.06.2006) "Classification of Targets for the Use of Real Estate and Procedure for the Change of Targets for the Use of Real Estate" and the Cabinet Regulation No 240 (30.04.2013) "General Regulations for Territory Planning, Use and Building", a land owner may change the land use target to forest land or land for construction; hence, reducing utilised agricultural areas.

Though, the share of unmanaged UAA has rapidly grown till 2014 irrespective of the decline in the area of arable land plots (Figure 1).



Source: authors' construction based on the Rural Support Service data, 2011-2016

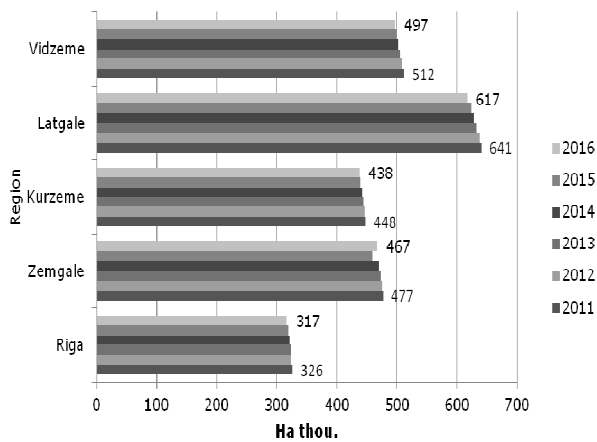
Fig. 1. The utilised agricultural areas and abandoned land plots in Latvia for the period 2011-2016

In Latvia, under the law unfarmed agricultural land is all the unfarmed agricultural land area of the land unit, if more than 30 % of the agricultural land area of the relevant land unit until 1 September of the current year are not being used for producing or growing agricultural products, including crop harvesting, grazing and keeping of animals for agricultural purposes, or the referred to land area is not being maintained in a good agricultural and environmental state (Par nekustama..., 1997). Initially, the UAA was considered unfarmed or unmanaged if more than 70 % of the land area of the unit were not maintained in proper condition; yet from 1 January 2013 the criteria was reduced to 30 %. These amendments to the law "On Immovable Property Tax" increased the share of abandoned utilised agricultural areas of total UAA by 1.44 percentage points. Already in 2010, the government tried to reduce degradation of UAA due to its abandonment introducing the amendments to Section 3 of the above mentioned law determining that "an additional immovable property tax in the amount of 1.5 % shall be applied to agricultural land which is not being farmed, except for land, the area of which does not exceed one hectare or for which restrictions on agricultural activities have been determined by laws and regulations" (Par nekustama..., 1997 with amendments). Hence,

the total immovable property tax rate for abandoned agricultural land is 3 %. Unfortunately, the introduced amendments did not essentially influence land management, since the share of unmanaged UAA continued to increase. Certainly, one may believe that the share of abandoned areas would grow faster without the introduction of these amendments. As the increased tax rate did not provide the desired results, the government of Latvia looked for other solutions to reduce the unmanaged areas. As a result, in 2015 the mass media often published reports on the government plans to introduce amendments to the "Latvian Administrative Violations Code" foreseeing fines for unmanaged UAA. According to the information disclosed in Figure 1, in 2015, the share of unmanaged UAA significantly decreased, i.e. by 1.79 percentage points compared with the previous year. The decline may be explained by the fact that land owners feared fines already in 2015, and thus, cultivated the land. The amendments to the "Latvian Administrative Violations Code" were passed only in 2016 and came into effect from 1 June, 2016. The Administrative Violations Code was supplemented with Section 54.4, which prescribes an administrative fine for the violation of land use conditions. The fine shall be up to EUR 700 for natural entities and up to EUR 5 000 for legal entities depending on the abandoned land areas. These amendments refer to those natural and legal entities that from 1 November 2014 possess more than 10 and 5 ha of agricultural land respectively (Latvijas Administratīvo pārkāpumu..., 1984). Thanks to the adopted amendments total unmanaged UAA in 2016 went down by 0.10 percentage points compared with the year before.

To identify reasons for land abandonment, the research authors analyse the breakdown of total UAA and unmanaged land areas by the regions of Latvia. Throughout the surveyed period, the largest utilised agricultural areas are observed in

Latgale region - about 26 % of the total UAA contrary to the UAA in Riga region which accounts for an average of 13 % of the total UAA. Total area and population density in the region are the basic factors impacting the amount of UAA in the regions of Latvia. The land will be more covered with buildings if the region has a high population density, so there are fewer areas of agricultural land. Respectively there are less UAA in Riga region, which total area covers 10 439 km² with the population density of 96 persons per km² and more UAA in Latgale region with the area of 14 550 km² and the population density of 19 people per km² on average (Platība, iedzīvotāju ..., 2016). A decrease in utilised agricultural areas in all regions of Latvia is observed throughout the surveyed period (2011-2016), excluding the year 2016 when the UAA territories in Zemgale region grew by 8 090 ha or 1.76 % (Figure 2).



Source: authors' construction based on the Rural Support Service data, 2011-2016

Fig. 2. The utilised agricultural areas in the regions of Latvia for the period 2011-2016, ha

Within six years, the largest decrease of UAA has occurred in Latgale and Vidzeme regions, where the areas declined by 23 343 ha and 14 968 ha respectively. In Vidzeme region, the decrease was observed in all districts; yet Aluksne, Gulbene and Madona districts were the dominating ones. In Latgale region, the most essential decreases were in Zilupe, Rezekne, Ludza and Dagda districts. The analysis of two

other regions shows that utilised agricultural areas in Kurzeme and Riga regions have declined by 10 416 ha and 8 610 ha respectively. In Zemgale region, total UAA has decreased by 9 509 ha in 2016 compared with 2011 irrespective of the UAA increase compared with 2015. The research authors believe that the terrain in Latgale and Vidzeme regions serves as the basic reason for the decline of utilised agricultural areas there (Figure 3).



Source: Latvia map, 2009

Fig. 3. The map of Latvia

Vidzeme and Latgale regions have the roughest relief in Latvia. As it is seen in the map of Latvia, the districts of Rezekne, Ludza, Zilupe, Dagda, Aluksne, Gulbene, Madona, Smiltene, Jaunpiebalga and Vecpiebalga have the highest and roughest relief. According to the research author's previous conclusion, exactly these territories have experienced the most significant decrease of UAA within the past six years. Agricultural production is economically unfavourable in these districts due to the rough relief, since soil fertility is low and without economic return. Therefore, land owners sell the UAA to forestry companies or change the land use purpose themselves and afforest arable land plots. Statistical data also evidence the increase of afforested areas in Latvia, which show that forest areas have grown by approximately 115 000 ha or 5 % for the period of six years (Latvijas meža ..., 2016).

As previously mentioned by the research authors, the amendments to the Administrative Violations Code on the application of fines for the

unfarmed UAA promoted the decrease of the share of unfarmed areas in total UAA by 0.1 percentage points. It was expected that abandoned unfarmed UAA would decline in Latvia in general; though, the decrease was observed only in Zemgale and Kurzeme (Table 1). This means that the relief and soil fertility significantly impact the amount of abandoned UAA, as land owners neither farm land nor engage in agricultural production in land plots that cannot ensure the desired efficiency. I.Pilvere, A.Nipers and I.Upite (2014) admit that "the main preconditions for the production of agricultural products are soil fertility, climate, and the location of land that, to a great extent, affect agricultural output and farm income". Similar ideas had been expressed in the seminar "Land abandonment, biodiversity and the CAP" stating that "abandonment has been propelled partly by the retirement of an older generation of more traditional farmers who accepted generally low living standards but formed part of a strong rural culture" (Land Abandonment ..., 2004). These are just some reasons for leaving agricultural production and looking for other occupations offering greater financial rewards and shorter working hours. D.Platonova (2014) expresses an opinion, which is also supported by the research authors that land owners are not willing to start or continue agricultural production if it requires excessive investments due to inefficient use of land. As shown in Table 1, the largest unfarmed territories of UAA are found in Latgale region, where the highest peak is reached in 2014 with 127 141 ha of abandoned UAA and figures for unmanaged UAA generally ranging between 112 756 ha and 127 141 ha for the period 2011-2016. Here, the share of abandoned UAA in total UAA is from 17.67 % to 20.23 %. The average soil fertility index in Latgale region is 32 points, which is the lowest index in Latvia; thus, it is more inefficient to farm land there and consequently there are many abandoned agricultural areas.

Ludza and Rezekne districts in Latgale region are territories with the majority of abandoned UAA. In 2016, the abandoned territories of UAA amounted to 13 146 ha and 25 052 ha in Ludza and Rezekne districts respectively. Zemgale region displays the smallest share of abandoned territories of UAA ranging between 8.78 % and 11.25 %. The average soil fertility index is 42 points in this region, which is the highest soil fertility index in Latvia (Nekustama ipasuma ..., 2014).

Table 1

Abandoned utilised agricultural land areas in the regions of Latvia between 2011 and 2016

	Riga region	Zemgale region	Kurzeme region	Latgale region	Vidzeme region
Abandoned UAA, ha					
2011	49129	42507	40401	118303	61221
2012	47603	41688	47168	112756	61633
2013	47342	51372	52632	125707	66235
2014	49592	53002	57121	127141	73571
2015	44290	44831	46055	119627	60007
2016	45270	42112	43005	120807	60507
Abandoned UAA, %					
2011	15.09	8.92	9.02	18.46	11.97
2012	14.69	8.78	10.58	17.67	12.13
2013	14.67	10.86	11.86	19.9	13.11
2014	15.44	11.25	12.92	20.23	14.62
2015	13.88	9.76	10.46	19.18	11.99
2016	14.28	9.01	9.83	19.57	12.18

Source: authors' construction based on the Rural Support Service data, 2011-2016

Therefore, the abandoned territories of UAA in Zemgale region are approximately 2-3 times less than in Latgale region. Soil fertility index in some districts of Zemgale region is smaller; hence, manufacturers of agricultural produce are not willing to engage in agricultural production, as it is not sufficiently efficient, and thus, land areas stay uncultivated. In Zemgale region, the most uncultivated land areas are found in Vecumnieki, Krustpils and Jaunjelgava districts. In 2016, uncultivated land areas amounted to 5 983 ha in

Vecumnieki district, 3 980 ha in Krustpils district and 3 482 ha in Jaunjelgava district. The research authors' conclusions on utilised agricultural areas broken down by regions coincide with the opinions expressed by I.Pilvere et al. (2013) and D. Platonova (2014) that agricultural production will not be performed in the territories with low soil fertility as it is more capital intensive. The fact that Latgale region evidences the lowest soil fertility index and the largest Figure of unfarmed agricultural areas prove the expressed conclusion.

Latgale region has the largest territories of UAA and simultaneously the largest territories of abandoned UAA, which can lead to a large-scale degradation of areas. This requires focusing on more efficient use of the UAA and reduction of the unmanaged areas. In Latgale region, the UAA consists of approximately 46 % of arable land and 52 % of meadows and pastures. Since Latgale region has the roughest relief and the lowest soil fertility, the best attributed agricultural activity there is livestock production. The authors' suggestion for reduction of unfarmed UAA in Latgale region may be considered as innovative - the conversion of uncultivated arable land plots into meadows and pasture could reduce the unmanaged areas in Latgale region; thus, the land would be used more efficiently facilitating to increase the number of herd, resulting from sufficient green forage and pasture. Consequently, more cattle-breeding companies could operate and develop in Latgale region, thus, reducing land abandonment and degradation.

Another problem is that the UAA is possessed not only by those engaged in agricultural production. Many land owners have inherited agricultural land but land is not used for agricultural purposes. This raises a variety of situations:

1) a land owner himself does not want or does not have enough financial resources to

manage the land, so s/he leases land to a manufacturer of agricultural produce;

2) a land owner himself does not want or does not have enough financial resources to manage the land and manufacturers of agricultural produce are not willing to lease land plots either due to low soil fertility or small land areas; hence the land stays uncultivated;

3) a land owner does not pay serious attention to the condition of its property, and has neither the time nor the desire to manage it but s/he has enough financial resources to pay an additional amount of tax and fines for unmanaged UAA.

The previous analysis has allowed concluding that the main reasons for land abandonment include low soil fertility due to the terrain peculiarities, lack of financial resources, time or willingness to manage land.

The government of Latvia should not only focus on the existing system of sanctions for unmanaged UAA, since land owners may sell their land to forestry holdings or change the land use purpose to avoid fines, thus, leading to a reduction of utilised agricultural areas. A significant decrease in utilised agricultural areas may result in the situation that is it impossible to ensure the population of Latvia with a sufficient amount of own-produced food and it has to be imported from other countries.

The government of Latvia could avoid decrease of utilised agricultural areas and increase of unmanaged land areas if land areas with lower soil fertility are directed to livestock production through the provision of financial aid for the conversion of land management purpose as well as it could support those landowners, who have insufficient financial resources for land management or who are unable to find agricultural producers to whom lease or sell the land. For example, the government could prescribe tax reliefs to those agricultural producers who have helped manage land of the

land owners having small income, having inherited the land or if the land is leased or purchased from such land owners.

Conclusions, proposals, recommendations

- 1) In Latvia, the utilised agricultural areas decreases with every year, thus, leading to a reduction of 66 846 ha within six years. Approximately 13-15 % of agricultural land is no longer cultivated, resulting in land degradation and land resource reduction.
- 2) Reasons for the abandonment of the UAA include low soil fertility due to the terrain peculiarities, lack of financial resources, time or willingness to cultivate the land.
- 3) The government of Latvia to reduce the uncultivated land areas has prescribed an additional immovable property tax in the amount of 1.5 % to agricultural land which is

not being farmed, and from 2016 fines are applied to those land owners who leave the land abandoned. Tax rate increase did not leave an essential impact on the reduction of abandoned land areas, since they continued to increase, while the application of fines facilitated the decrease of unmanaged agricultural land areas by 1.89 %.

- 4) Unfortunately, the introduced amendments to "Immovable Property Tax" did not essentially influence land management, since the share of unmanaged UAA continued to increase.
- 5) The utilised agricultural areas with low soil fertility could be directed for the development of livestock production. These land plots could be sold to cattle-breeding companies for a lower price or the state aid could be provided for the management of such land.

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